

In the Claims:

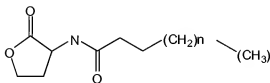
The current status of all claims is listed below and supersedes all previous lists of claims.

Please amend claims 1, 2, 11, 17, 19, 20, and 32; and cancel claims 3-5, 13, and 21-23 as follows:

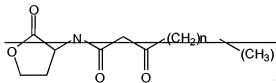
1. (currently amended) A method for the treatment of a bacterial infection of a subject comprising:

administering to said subject a monoclonal antibody, wherein said monoclonal antibody is selected from a naïve human antibody phage display library by screening the library against ~~to~~ a molecule selected from the group consisting of:

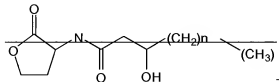
- a) a homoserine lactone molecule of general Formula I; ~~formulae I, II, or III;~~



Formula I



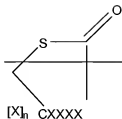
Formula II



Formula III

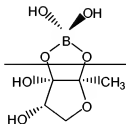
where n = 0 to 12;

- b) a peptide thiolactone of general formula (IV):

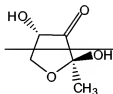


where X is any amino acid and n = 1 to 10;

e) Auto Inducer 2 (AI-2);



or d) Pro-AI-2 or a C₁-C₁₀ saturated or unsaturated carboxylic acid derivative thereof

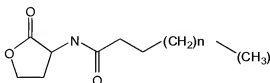


wherein said antibody specifically binds to the free soluble form of the homoserine lactone, ~~peptide thiolactone, AI-2 or Pro-AI-2~~ or a C₁-C₁₀ saturated or unsaturated carboxylic acid derivative thereof in the presence of conjugated derivatives thereof.

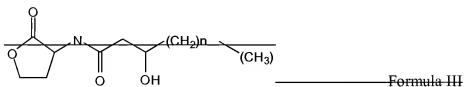
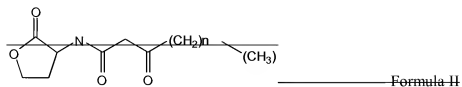
2. (currently amended) A method as claimed in claim 1, in which the homoserine lactone molecule of general formula I is N-butanoyl-L-homoserine lactone ~~N-butanoly-L-homoserine lactone~~ (BHL) where n = 0, *N*-dodecanoyl-L-homoserine lactone (dDHL) where n = 8, or *n*-tetradecanoyl-L-homoserine lactone (tDHL) where n = 10.

3-5. (canceled).

6. (previously presented) A method as claimed in claim 1, in which the monoclonal antibody is a single chain antibody (scAb).
7. (previously presented) A method as claimed in claim 1, in which the monoclonal antibody is an antibody fragment.
8. (previously presented) A method as claimed in claim 7, in which the antibody fragment is a single chain variable fragment (scFv).
9. (previously presented) A method as claimed in claim 7, in which the antibody fragment is a single domain fragment.
10. (previously presented) A method as claimed in claim 1 wherein immuno-suppression caused by said bacterial infection is treated by said administering.
11. (currently amended) A method of screening a naïve human phage display library population of monoclonal antibodies for an anti-bacterial monoclonal antibody comprising:
conjugating ~~a molecule selected from the group consisting of:~~
a) a homoserine lactone molecule of general Formula I: formulae I, II, or III:

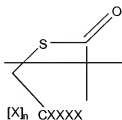


Formula I



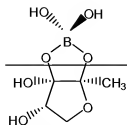
where $n = 0$ to 12 ;

b) a peptide thiolactone of general formula (IV):

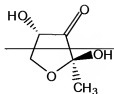


where X is any amino acid and $n = 1$ to 10 ;

e) Auto Inducer 2 (AI-2);



or d) Pro-AI-2 or a C_4 - C_{10} saturated or unsaturated carboxylic acid derivative thereof



to a carrier molecule; and

using the conjugate so formed to identify a monoclonal antibody that specifically binds to the free soluble form of the homoserine lactone, ~~peptide thiolactone, AI-2 or Pro-AI-2~~ or a C₁-C₁₀ saturated or unsaturated carboxylic acid derivative thereof from the population of monoclonal antibodies in the presence of conjugated derivatives thereof.

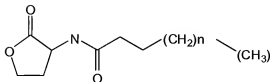
12. (previously presented) A method as claimed in claim 11, in which the carrier molecule is a protein.

13-16. (canceled).

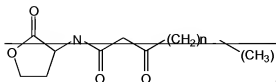
17. (currently amended) A method of treatment of a bacterial infection of a subject comprising:

isolating ~~a molecule selected from the group consisting of:~~

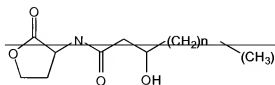
a) a homoserine lactone molecule of general Formula I; ~~formulae I, II, or III;~~



Formula I



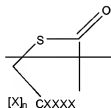
Formula II



Formula III

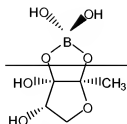
where $n = 0$ to 12 ;

b) a peptide-thiolactone of general formula (IV):

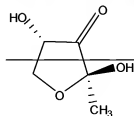


where X is any amino acid and $n = 1$ to 10 ;

e) Auto Inducer 2 (AI 2);



or d) Pro-AI 2 or a C_4 - C_{10} saturated or unsaturated carboxylic acid derivative thereof



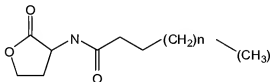
in a sample from said subject;

using said molecule to screen a ~~population of monoclonal antibodies~~ naïve human antibody phage display library for an anti-bacterial monoclonal antibody that specifically binds to the free soluble form of said molecule, in the presence of conjugated derivatives thereof; and administering said monoclonal antibody so identified to said subject.

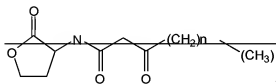
18. (previously presented) A method as claimed in claim 17, in which the sample is of blood, saliva, tissue, cerebro-spinal fluid, tears, semen, urine, faeces, pus, skin, or mucous secretions.

19. (currently amended) A monoclonal antibody selected from a naïve human antibody phage display library by screening the library against ~~to a molecule selected from the group consisting of:~~

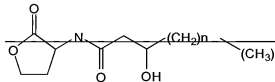
a) a homoscrine lactone molecule of general Formula I: ~~formulae:~~



Formula I



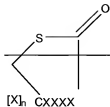
Formula II



-III

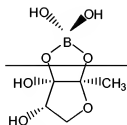
where n = 0 to 12;

b) a peptide thiolactone of general formula (IV):

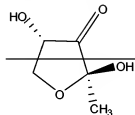


where X is any amino acid and n = 1 to 10;

e) Auto Inducer 2 (AI 2);



or d) Pro-AI 2 or a C₄-C₁₀ saturated or unsaturated carboxylic acid derivative thereof

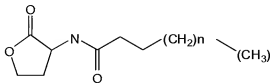


wherein said antibody specifically binds to the free soluble form of the molecule in the presence of conjugated derivatives thereof.

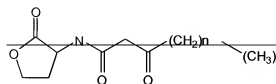
20. (currently amended) A monoclonal antibody as claimed in claim 19, in which the homoserine lactone molecule of general formula I is N-butanoyl-L-homoserine lactone ~~N-butanoyl-L-homoserine lactone~~ (BHL) where n = 0, N-dodecanoyl-L-homoserine lactone (dDHL) where n = 8, or n-tetradecanoyl-L-homoserine lactone (tDHL) where n = 10.

21-23. (canceled).

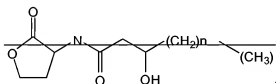
24. (previously presented) A monoclonal antibody as claimed in claim 19 which is a single chain antibody (scAb).
25. (previously presented) A monoclonal antibody as claimed in claim 19 which is an antibody fragment.
26. (previously presented) A monoclonal antibody as claimed in claim 25, in which the antibody fragment is a single chain variable fragment (scFv).
27. (previously presented) A monoclonal antibody as claimed in claim 25, in which the antibody fragment is a single domain fragment.
28. (previously presented) A pharmaceutical composition comprising an antibody as defined in claim 19.
29. (previously presented) A kit of parts comprising an antibody as defined in claim 19 provided in unit dosage form and instructions for use thereof.
- 30-31. (canceled).
32. (currently amended) A monoclonal antibody to ~~a molecule selected from the group consisting of:~~
a) a homoserine lactone molecule of general Formula I; ~~formulae I, II, or III;~~



Formula I



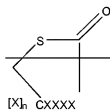
Formula II



Formula III

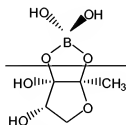
where $n = 0$ to 12 ;

b) a peptide thiolactone of general formula (IV):

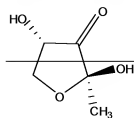


where X is any amino acid and $n = 1$ to 10 ;

e) Auto Inducer-2 (AI-2);



or d) Pro-AI-2 or a C_4 - C_{10} saturated or unsaturated carboxylic acid derivative thereof



wherein said antibody specifically binds to the free soluble form of the molecule in the presence of conjugated derivatives thereof, in which said antibody is obtained by a method comprising:

screening a naïve human phage display library of ~~monoclonal antibodies~~ using said molecule conjugated to a carrier molecule;
optionally re-screening said library;
screening a naïve human phage display library with free unconjugated molecule; and
optionally rescreening said library.

33. (previously presented) A single chain antibody (scAb) from *E. coli* clones G3H5, G3B12, G3G2 or G3H3 deposited as NCIMB-41167, NCIMB-41168, NCIMB-41169 and NCIMB-41170 respectively.